The Necessary and Sufficient Conditions for Hypnotic Behavior Theodore Xenophon Barber, PhD¹

A theory of hypnosis stands or falls by its answer to one crucial question: Why do some subjects quickly and easily experience many of the phenomena of hypnosis while other subjects show very little if any hypnotic behavior after many attempts by numerous hypnotists? This paper presents suggestive evidence indicating where an answer to this question may be found.

Motives, Expectations and Attitudes

Recent theories of hypnosis tend to view the "good" hypnotic subject as a person who (a) has favorable attitudes toward hypnosis, (b) is strongly motivated to be hypnotized, and (c) expects to be hypnotized. Although hypnotizable subjects often show these characteristics, this is by no means always the case. Some subjects quickly and easily show some, if not many, hypnotic behaviors—e.g., catalepsy, visual, auditory, and tactile hallucinations, age-regression—when they do not want to be hypnotized, when they are afraid of being hypnotized, and even when they do not know that they are being hypnotized. Erickson and Kubie (22) have demonstrated that it is unnecessary for a person to know that he is being hypnotized to behave in the hypnotic manner; by indirectly guiding an individual to become attentive to the situation described by the hypnotist, they were able to induce her to show hypnotic phenomena — e.g., age-regression and amnesia—when she was under the impression that she was merely observing the hypnotizing of another person. Along similar lines, I found in a recent study (13) that 20 out of 70 "naive" subjects (i.e., subjects who had not participated in previous experiments) could be readily induced to show arm levitation, limb catalepsy, eye catalepsy, anesthesia, and sensory hallucinations when the situation was designed in such a way as to lead them to believe that they were being tested for "imaginative ability." (These subjects were instructed to imagine that an arm was rising, to imagine that a limb was heavy and immovable, etc.)

That hypnotic behavior can be induced in appropriately predisposed subjects contrary to their expectations has been demonstrated in a number of investigations; Wells (42) and the writer (13), for example, report that some subjects who do not expect to be hypnotized can be easily hypnotized, and that

some subjects who are certain that they can be easily hypnotized cannot be induced to show any hypnotic behavior even after many trials with a number of hypnotists.

Although the prestige of the hypnotist and the nature of the relationship between subject and hypnotist often have a significant influence on the subject's behavior, these also are not always crucial factors. The present writer and other investigators who began working with hypnotic phenomena when still undergraduates found that they could easily hypnotize some subjects with whom they had no prestige whatsoever. Furthermore, Barry, MacKinnon, and Murray (15), Saltzman (38), Friedlander and Sarbin (27), and Eysenck (25) have experimentally demonstrated that most subjects behave in essentially the same way in different hypnotic sessions, when different induction procedures are used, and when different hypnotists participate. Finally, the phenomenon of autohypnosis indicates that *some* individuals are able to experience *some* hypnotic phenomena without having formed an interpersonal relationship with a hypnotist (24).

If favorable motivations and appropriate expectations and attitudes toward hypnosis are not essential factors for hypnotic behavior, what are the crucial factors? After a series of experiments, Young (43) concluded that "the differences which appear in somnambulism are differences in . . . the persons involved and would be better described, perhaps, merely as individual differences in normal persons, than as differences between the normal and hypnotic states as such." Along similar lines, Friedlander and Sarbin (27) note that "hypnotizability is not primarily a function of the particular hypnotist, but rather of the subject himself." After reviewing the effect of various types of hypnotic induction procedures, Sarbin (37) emphasized that "since the induction procedure per *se* cannot account for the differential responsiveness of subjects, this leaves the subject *as a person* as the more fruitful focus of study."

What are the significant characteristics of the "good" hypnotic subject? How does the "good" hypnotic subject differ as a person from the "poor" hypnotic subject? Before answering these questions it is necessary to specify exactly what the good subject does and what the poor subject fails to do during an hypnotic experiment.

The Unique Factor in Hypnotic Behavior

Both the normal "waking" individual and the "hypnotized" subject attend to, think about, and respond to *selected* cues (or stimuli). The waking individual and the poor hypnotic subject attend to some cues and not to others, but these cues are derived from their own ongoing purposes and are continually varying; the good hypnotic subject, however, becomes and *remains* (during the experiment) selectively attentive, thinking about, and responsive to cues emanating from the hypnotist (and concomitantly becomes and remains selectively inattentive, notthinking-about, and unresponsive to other potential stimuli.) ² Although this appears to the present writer, to Leuba (32), and to others to be the unique factor in hypnotic behavior, evidence that this is actually what distinguishes the good subject during hypnosis is at present based on observation and on the subjects' verbal reports. For example:

(a) Many investigators have noted that the good hypnotic subject appears to be responsive only to those aspects of his self and surroundings to which the hypnotist specifically directs his attention (6). Christenson (18) emphasizes that "unless the agent calls them to attention, a number of environmental stimuli seem to be shut off, for example, noises in general, and awareness of or reaction to the presence of other persons not involved in the process." Arnold (1) observes that "in hypnosis (as

in sleep) sensitivity to outside stimulation (apart from stimuli by the hypnotist) is decreased considerably." Along similar lines, Erickson has noted in a series of reports that his good hypnotic subjects show an apparent unawareness of auditory, visual, and tactile stimuli which do not belong to the hypnotic situation itself, as the subjects themselves define the situation.

- (b) If the hypnotist pauses at various points in the induction procedure and asks the subject what he is thinking about, the poor subject almost always answers that he is thinking about something unrelated or something contrary to the immediate hypnotic situation; for example, he is thinking about the street noises, how uncomfortable it is sitting in the chair, how silly this all is, etc. In contrast to the above, the subject who will exhibit the classical hypnotic phenomena typically answers that he is not thinking of anything at all. If the good subject reports that he is thinking about something, it is related to the immediate hypnotic situation, e.g., "I'm thinking how peaceful everything is," "I'm thinking how heavy my arm felt when I tried to move it." (7).
- (c) If subjects who have participated in numerous hypnotic experiments with a variety of hypnotists using various types of induction procedures are asked to state "as scientifically and objectively as possible what the difference is between the way you feel during hypnosis and when awake," they state directly or indirectly that during the hypnotic experiment they are less responsive to stimuli not emanating from the hypnotist. Typical answers are: "Things don't matter too much during hypnosis... less awareness of my physical self"; "When I'm awake I'm aware of more. I see more. In trance you see what you're directed to. You're not bothered by anything else"; "When I'm awake, I'm more alert. I feel more like doing things. I don't much care about doing things during hypnosis. I don't pay attention to anything." (2).

The significance of the above factor has been noted by practically all investigators. However, since this factor includes two interrelated components—the subject (a) attends to and (b) thinks about the implications of the hypnotist's statements (and concomitantly (a) remains inattentive to other potential stimuli and (b) inhibits critical thoughts concerning the hypnotist's statements—it has received a variety of formulations which despite superficial disagreement actually have a common referent. Freud (26) emphasized the first component—attention to the words of the hypnotist when he concluded that the hypnotic situation is one in which "the hypnotist has said to the subject: 'Now concern yourself exclusively with my person; the rest of the world is quite uninteresting'... The command to sleep ... means nothing more or less than an order to withdraw all interest from the world and to concentrate it upon the person of the hypnotist. And it is so understood by the subject." (Although Freud speaks in terms of the subject attending to the person of the hypnotist, it is more appropriate to state that the subject attends to the words of the hypnotist or to the situation described by the hypnotist). Leuba (31) also notes this component when he writes that the primary characteristic of hypnotic behavior is "the limitation of the spontaneous mental life of the subject and the consequent limitation of attention to the stimuli provided by the experimenter." Arnold (1) emphasizes the second component, viz., the subject limits his

symbolic processes to the situation described by the hypnotist; she writes that the subject "must literally think as the operator wants him to think. In every instance in which the subject cannot be hypnotized, he reports afterwards either that he could not concentrate on the experimenter's words, perhaps because he could not forget the absurdity of the situation, perhaps because he kept thinking about something else . . . or deliberately resisted." Hull (29) came to a similar conclusion: "The subject's own symbolic processes... remain passive so far as the particular act suggested is concerned ... Apparently some individuals are unable to withdraw to an appreciable extent the influence of their own symbolic processes; these individuals would be classed as insusceptible to heterosuggestion." (Hull's formulation requires revision. It is not the withdrawal of symbolic activities *per se* which is the unique factor but the withdrawal, i.e., inhibition of, *critical* symbolic activities.) Weitzenhoffer (41) also notes this factor, e.g., "one must ask whether inhibition or abolition of the critical faculties may not be the main character and condition for suggestibility and hypnosis."

Although superficially dissimilar, the above statements are actually various ways of conceptualizing one essential factor: the good subject in a hypnotic experiment attends to and thinks about the situation described by the hypnotist and, concomitantly, remains relatively inattentive, not-thinking about, and unresponsive to other symbolic or concrete stimuli. However, since the situation described by the hypnotist may vary from one that is extremely limited—"you are going sound asleep"—to one that includes all aspects of the normal stimulus surroundings—"behave as if you are awake when Dr. X enters the room"—the cues or stimuli to which the good hypnotic subject attends, thinks about, and responds may vary from those which are effective during sleep to those which are effective during normal waking behavior. If the "hypnotized" subject is given appropriate sleep-inducing instructions, he may enter physiological sleep, i.e., the electroencephalogram may show "delta," "spindle," or "slow regular waves" (14, 40). However, if the "hypnotized" subject is given suggestions to "behave as if he is awake," he may be indistinguishable from a normal waking individual; e.g., De Milechnin (20) writes: "There appears to be a remarkable similarity between the 'somnambulistic' hypnotic behavior and the ordinary waking behavior . . . Our best hypnotic subjects have appeared to be the least convincing ones to the colleagues who wanted to see hypnotic behavior." In fact, it can no longer be seriously disputed that all of the hypnotic phenomena can be elicited in appropriate subjects by a direct approach which does not induce relaxation, drowsiness, or lethargy, and that the numerous signs which were formerly considered to be characteristic of "hypnosis"—a certain type of breathing, lethargy or passivity, relaxation, a fixed stare, a fixed position of the eyeballs, etc.—are not necessary for hypnotic behavior (35, 8).

The "Hypnotic Attitude"

The evidence available at present suggests that the specific behavior which characterizes the good subject during a hypnotic experiment is an integral part of his behavioral repertoire *before* he participates in such experiments. More explicitly, during the course of his normal "waking" life, the somnambulistic hypnotic subject is predisposed to become and *remain* (for a relatively extended period of time) attentive, thinking about, and responsive to selected stimuli. Young (44) noted that his good hypnotic subjects showed one or more of the following characteristics *before* they were formally hypnotized: "deep abstraction, reverie amounting almost to ecstasy, putting oneself to sleep at will, actually hypnotizing one's self." In an earlier study (6), I found similar characteristics among somnambulistic subjects, e.g., they were able to sleep at will and were able to

concentrate on their work or studies by blocking out irrelevant stimuli. The results of a more recent study (13) also suggest a similar conclusion. At the present time, we have studied the life-histories of 16 somnambulists and a matched control group of poor hypnotic subjects. Five of the 16 somnambulists stated, when asked to discuss their experience with pain, that they do not require a local anesthetic for dental work; prior to participating in hypnotic experiments, they had discovered that by thinking about something pleasant and inhibiting all thoughts concerning the dental situation, they could undergo various dental procedures—including extractions—without discomfort (3). Of the 16 poor hypnotic subjects, none stated that he could forego a local anesthetic for dental work.

Other workers, using a different terminology, also note that the somnambulistic hypnotic subjects possess a distinctive "ability" or "aptitude." Bernheim (16) emphasized that "the somnambulist often goes spontaneously into the somnambulistic condition of consciousness ... they pass from one state of consciousness into the other very easily; I repeat the fact that they are somnambulists spontaneously without any art of preparation." Christenson (19) writes that "observation of excellent subjects has shown that they will develop brief trances on a spontaneous basis ... Such transitory states when not perceived can distort data gained from 'waking' experiments with good subjects. These states are not usually noted by the subjects themselves unless attention is called to them... Other workers, e.g., Malmo, Boag, and Raginsky (33), also note that during normal life and during "waking" control experiments, good hypnotic subjects "tend to lapse into a mild hypnotic state." The present writer suggests that the above statements—viz., the good subject goes "spontaneously into the somnambulistic condition of consciousness," "develops brief trances on a spontaneous basis," and "lapses into a mild hypnotic state"—are different ways of saying that the good subject is predisposed to become and remain attentive, thinking about, and responsive to selected stimuli.

The Attitude of "Basic Trust"4

The above ability or aptitude is probably both a *necessary* and *sufficient* condition for *autohypnotic* behavior. Furthermore, a recent series of investigations (13) indicate that this aptitude is probably both a *necessary and sufficient* condition for hypnotic behavior when the subject does not perceive the situation as involving an intimate relationship with another person (a hypnotist). However, these recent studies (13) also indicate that individuals who possess the "hypnotic aptitude"—i.e., individuals who can quickly and easily become and remain attentive, thinking about, and responsive to selected stimuli—may not show any hypnotic behavior in a *situation defined as involving "hypnosis*" if they lack the attitude of "basic trust" toward oneself and others.⁵ One of these studies (to which I referred in an earlier section of this paper) can be briefly summarized as follows:

Preliminary Questionnaire. Seventy subjects—20 male and 50 female attendants, nurses, and clerical workers at the Medfield State Hospital—were given the Guilford-Zimmerman Temperament Survey and an abbreviated version of the F (California Authoritarian) Scale.

Experiment 1: "Imagination"

Procedure. Each of the 70 subjects participated in an individual session, in which he was told that he was to be tested for "imaginative ability." (Hypnosis was not mentioned). The subject was instructed to "imagine as vividly as possible" and to "concentrate on" the following:

- (a) Imagine that your left hand is becoming very light like a feather. Imagine that it is a balloon and it is rising up and up. (Instructions to imagine the arm becoming lighter were continued for 30 seconds.)
- (b) Imagine that your right arm is a solid steel bar. Imagine it is solid, hard, rigid, and immovable. (This and each of the following instructions were repeated for 30 seconds.)
- (c) Imagine that your left leg is becoming dead, dull, numb, and insensitive. Imagine that it has fallen asleep and that it cannot feel anything at all.
- (d) Imagine a very heavy weight on your right leg. Imagine that the weight is so heavy that it is impossible to move the leg.
- (e) Imagine that your eyelids are becoming very heavy, as if they are made of steel. Imagine that they are so heavy that you cannot keep them open.
- (f) Imagine that I am turning the heat on in the room and that you can feel the hot air blowing toward you... Now imagine that I am turning the fan on and you can feel the cool air coming in your direction.
- (g) Imagine that your lips are becoming very dry and you are becoming extremely thirsty. Imagine that you have not had a drink of water for many days... Now imagine that you are drinking a cool refreshing glass of water.
- (h) Imagine that you are at home in bed, you are sleeping, and you are having a beautiful dream.

Immediately after completing the above, the subjects were asked to comment on their experiences during the experiment. After recording their verbal reports, they were asked if they "felt the experiment had something to do with hypnosis." Finally, they were told not to discuss the experiment with others.

Results. Twenty of the 70 subjects responded to the above tests as if they were "hypnotized"; they showed arm levitation, limb rigidity, anesthesia, eye catalepsy, hallucinations, and "hypnotic dreams," and their subsequent verbal reports were indistinguishable from those of "good" hypnotic subjects, e.g., "Are you sure you didn't turn on the heat and the fan? I was sure I felt them blowing against me," "I really thought I couldn't move my arm," "I felt like I was dying from thirst," "I was stunned when my left leg felt glued to the floor," "I felt like I couldn't open my eyes," "I had a beautiful dream in which … "These 20 subjects were rated as possessing the "hypnotic aptitude" to a marked degree."

When asked if they "felt that the experiment had something to do with hypnosis," 19 of the 20 subjects (who responded positively to all of the above tests) replied that they did not think the experiment was very much like hypnosis, and one subject stated that the experiment was probably similar to hypnosis.

Experiment 2: "Hypnosis"

Procedure. The twenty subjects who appeared to possess the "hypnotic aptitude" were specifically told that they were to be "hypnotized." Instead of instructions to "imagine"

the above effects, they were given direct suggestions that such effects would occur. In addition, they were given direct suggestions of inability to say their name, age-regression, visual and auditory hallucinations, post-hypnotic amnesia, and post-hypnotic behavior.

Results. Sixteen of the 20 subjects behaved in the classical somnambulistic manner, i.e., they quickly and easily showed hypnotically induced dreaming, inability to say their names, visual and auditory hallucinations, convincing age-regression, post-hypnotic amnesia, and post-hypnotic behavior.

Three of the 20 subjects showed positive responses on most of the suggestions, but failed to show convincing age-regression, did not carry out the post-hypnotic suggestion, and did not show post-hypnotic amnesia. One subject did not respond to any of the suggestions.

Discussion

Why did four of the 20 subjects who appeared to possess the "hypnotic aptitude" to a marked degree when asked to imagine various (hypnotic) phenomena fail to behave in a somnambulistic manner when told they were going to be hypnotized? One relevant factor is that all four of these subjects were overtly resistant during the "hypnotic" experiment; each stated (before the experiment) that he was "anxious about hypnosis" and each stated (after the experiment) that he tried to resist being hypnotized. However, six of the 16 subjects who behaved in the somnambulistic manner also stated that they were afraid of hypnosis and that they tried to resist the hypnotic procedure. Why were the six somnambulistic subjects (who attempted to resist) unable to resist any of the suggestions, why were three subjects able to resist some suggestions but not others, and why did one subject successfully resist all of the suggestions?

A tentative answer to this question appeared when an item-by-item analysis was completed on the 312 questions included in the Guilford-Zimmerman Survey and the abbreviated F-scale. We found that a series of questions could delineate a personality dimension which we provisionally termed, following Erik Erikson (23), "an attitude of basic trust toward oneself and others." Five typical questions from the Guilford-Zimmerman Test, for example, which appeared to indicate this attitude were as follows:

When you lose something you often begin to suspect someone of either having taken it or having misplaced it. (No.)

You have frequently felt like telling "nosey" people to mind their own business. (No.)

Some people become so rude that you feel the urge to "sit on them" or to "tell them off." (No.)

It is difficult for you to chat about things in general with people. (No.)

It is easy for you to act naturally wherever you are. (Yes.)

You enjoy getting acquainted with people. (Yes.)

When the subjects' answers on the questionnaires were analyzed in terms of this personality dimension, it was discovered that the only subject of this entire group of 20 who did not show "basic trust" was the one subject who had failed to show any hypnotic behavior in the second experiment.

Conclusion

This experiment appears to indicate the following:

- (a) Subjects who seem to possess the "hypnotic aptitude" to a marked degree show different behavior when they are told that they are going to be "hypnotized."
- (b) Subjects who possess both the "hypnotic aptitude" and the "attitude of basic trust toward oneself and others" and are not "afraid of hypnosis" behave as somnambulistic subjects.
- (c) Subjects who possess both the "hypnotic aptitude" and the "attitude of basic trust" but are "afraid of hypnosis"—i.e., overtly resist "being hypnotized"—do *not successfully resist*; despite their overt resistance they behave as somnambulists or as good or fair hypnotic subjects.
- (d) Subjects who do not possess the "attitude of basic trust" can successfully resist the hypnotic procedure and may not show any hypnotic behavior even though they may possess the "hypnotic aptitude" to a marked degree.

If the results of the above experiment are combined with the results of a series of related studies reported elsewhere (13), the following conclusion is indicated:

(e) Given a minimum of skill on the part of the hypnotist, the *necessary and sufficient* conditions for a subject to show at least some hypnotic behavior (in an experiment which the subject perceives as involving "hypnosis" or as involving an intimate relationship with another person, viz., a hypnotist) appear to be as follows: (a) the subject must possess the "hypnotic aptitude"—i.e., the ability to quickly and easily become and remain attentive, thinking about, and responsive to selected stimuli — and (b) the subject must possess the "attitude of basic trust toward oneself and others."

A second study which is in progress appears to lead to a similar conclusion as above. This investigation can be briefly summarized as follows:

Rationale. Binet and Fere (17), Erickson and Erickson (21), and Rosenthal and Mele (36) have found that some somnambulistic hypnotic subjects (who do not seem to possess prior knowledge of complementary color relationships) report the appropriate complementary colored after-images of suggested colors. It has generally been assumed that "a deep state of hypnosis" is necessary for this behavior. However, a recent study (9, 10) has demonstrated that some individuals (who have never been "hypnotized") can do the same thing when they are "normally awake," and it appears justified to tentatively assume that these relatively rare individuals, approximately 10% of the population (13), possess the "hypnotic aptitude" to a marked degree.

Progress report. We found seven individuals who were able, when "normally awake," to "vividly imagine" and "project" colors which were followed by appropriate complementary colored after-images. These individuals had never been hypnotized, and they did not

appear to possess prior knowledge of complementary color relationships.

In a subsequent experiment, the seven subjects were tested for hypnotizability and were given the Guilford-Zimmerman Temperament Survey and the abbreviated F-scale. The results were as follows:

- (a) In the hypnosis experiment, six of the seven subjects behaved as natural somnambulists," and one subject behaved as a "poor" or "fair" hypnotic subject, showing hand levitation, eye catalepsy, and limb rigidity but none of the more complex hypnotic phenomena, such as visual and auditory hallucinations, ageregression, or post-hypnotic amnesia.
- (b) On the personality questionnaires, six of the seven subjects showed the "attitude of basic trust toward oneself and others," and one subject did not show this attitude.
- (c) The same person who behaved as a "poor" or "fair" subject in the hypnotic experiment also failed to show the "attitude of basic trust" on the questionnaires.

Provisional conclusion. These preliminary results with seven subjects appear to indicate the following:

- (a) Individuals who seem to possess the "hypnotic aptitude" to a marked degree i.e., who are able, when "normally awake," to "hallucinate" colors which are followed by appropriate after-images behave as "natural somnambulists" in a "hypnosis" experiment if they also possess the "attitude of basic trust toward oneself and others."
- (b) Individuals who seem to possess the "hypnotic aptitude" to a marked degree but do not possess the "attitude of basic trust" behave as "poor" or "fair" subjects in a "hypnosis" experiment.

Contributory Factors in Hypnotic Behavior

Given a modicum of skill on the part of the hypnotist, the above conditions appear to be both necessary and sufficient for a subject to show some if not many of the hypnotic phenomena. However, additional factors appear to be necessary for a subject to carry out all of the hypnotic behaviors. First of all, for the subject to show some of the more difficult hypnotic behaviors, such as negative hallucinations, the hypnotist must possess more than a minimum of skill; more precisely, the hypnotist must be able to manipulate adroitly his words and the situation in such a way as to lead the subject to believe that the suggestions are literally true statements (5).

Secondly, some of the hypnotic phenomena appear to depend on a unique physiological predisposition on the part of the subject. As Schilder and Kauders (39) have suggested and as Pattie (34) has indicated in his review of the literature, it appears probable that localized blisters can be induced by hypnotic procedures only in rare individuals who show an unusual lability of the vasomotor system, e.g., who show a predisposition to dermographism and urticaria. Along similar lines, Kretschmer and Krüger (30) report that they were able to alter blood-calcium levels by hypnotic suggestion only in subjects who showed an unstable blood-calcium level prior to being hypnotized. Similarly, Gigon, Aigner, and Brauch (28) found that they could significantly affect blood-glucose levels by hypnotic suggestion in patients with abnormal and labile blood-sugar levels (i.e., in diabetics) but could not do so in normal subjects.

Furthermore, although an appropriately predisposed subject, i.e., a subject possessing both the "hypnotic aptitude" and the "attitude of basic trust," can be readily induced to show analgesia for brief noxious stimulation such as pinprick and to show posthypnotic amnesia for a limited period of time, something more is necessary for the subject to show analgesia to severe and persistent noxious stimuli, or post-hypnotic amnesia lasting for a considerable period of time, or antisocial or dangerous behavior during hypnosis. If a subject is not strongly motivated either to experience hypnosis or to please his particular hypnotist it is doubtful that he will continue to remain unresponsive to severe and persistent noxious stimulation (11,12) or that he will long continue inhibiting all thoughts concerning the hypnotic experiment (4) or that he will long continue responding to the situation described by the hypnotist when given suggestions leading to antisocial or criminal acts.

Although this paper has emphasized the necessary and sufficient conditions for hypnotic behavior, it does not intend to imply that other factors are not important. They are very important. The skill of the hypnotist, the subject's motivation to experience hypnosis or to please his particular hypnotist, the specific relationship between subject and hypnotist, almost always play a very important role in hypnotic experiments. However, they do not always do so and they do not necessarily do so.

Summary and Conclusions

- (a) Some subjects quickly and easily show some if not many hypnotic behaviors when they do not have favorable attitudes toward hypnosis, are not motivated to be hypnotized, and do not expect to be hypnotized. Other subjects, who very much want to experience hypnosis, show very little if any hypnotic behavior after numerous attempts by many hypnotists.
- (b) During an hypnotic experiment, the "good" subject carries out a unique type of behavior: he becomes and remains selectively attentive, thinking about, and responsive to cues emanating from the hypnotist (and concomitantly becomes and remains selectively inattentive, not-thinking-about, and unresponsive to other symbolic or concrete stimuli).
- (c) The unique behavior which characterizes the good subject during a hypnotic experiment is an integral part of his behavioral repertoire before he participates in such experiments. During the course of normal "waking" life, the somnambulistic hypnotic subject, much more often than the poor hypnotic subject, becomes and remains for relatively extended periods of time responsive only to selected stimuli.
- (d) This "hypnotic aptitude" appears to be both a necessary and sufficient condition for autohypnotic behavior and for hypnotic behavior in a situation which the subject does not perceive as involving "hypnosis" or does not perceive as involving a close relationship with another person.
- (e) However, the hypnotic aptitude is not in itself a sufficient condition for hypnotic behavior when the subject is specifically told that he is going to be "hypnotized" or when the subject perceives the situation as involving an intimate relationship with another person, viz., a hypnotist. In this situation the necessary and sufficient conditions for hypnotic behavior appear to be as follows: (a) the subject must

- possess the hypnotic aptitude and (b) the subject must possess the attitude of "basic trust" toward oneself and others.
- (f) The problem of "hypnotizability" is inseparable from the more general problem of personality development. Why are some individuals and not others able to quickly and easily become and remain responsive to selected stimuli? Why do some individuals and not others possess the attitude of "basic trust"? Only long-term genetic studies will be able to answer these questions.

References

- 1. Arnold, M.B. (1946). On the mechanism of suggestion and hypnosis. *Journal of Abnormal Social Psychology*, 41, 107-128
- 2. Barber, T.X. (1957). Hypnosis as perceptual-cognitive restructuring: I. Analysis of concepts. *Journal of Clinical & Experimental Hypnosis*, *5*, 147-166.
- 3. (1957). Hypnosis as perceptual-cognitive restructuring: III. From somnambulism to autohypnosis. *Journal of Psychol.*, *44*, 299-304.
- 4. (1958). Hypnosis as perceptual-cognitive restructuring: II. "Post" hypnotic behavior. *Journal of Clinical & Experimental Hypnosis*, 6, 10-20.
- 5. (1958). Hypnosis as perceptual-cognitive restructuring: IV. "Negative hallucinations." *Journal of Psychol.*, 46, 187-201.
- 6. (1958). The concept of "hypnosis." *Journal of Psychol.*, 45, 115-131.
- 7. (1958). The "good" hypnotic subject. Sci. Digest, 43(1), 36-41.
- 8. and Coules, J.(1959). Electrical skin conductance and galvanic skin response during "hypnosis. *Journal of Clinical & Experimental Hypnosis*, 7, 79-92.
- 9. (1959). The after-images of "imagined" and "hallucinated" colors. *Journal of Abn. Soc. Psychol.* 59, 136-139.
- 10. (1959). The "eidetic image" and "hallucinatory" behavior: A suggestion for further research. *Psychol. Bull.*, *56*, 236-239.
- 11. (1959). Toward a theory of pain: Relief of chronic pain by prefrontal leucotomy, opiates, placebos, and hypnosis. *Psychol. Bull.*, *56*, 430-460.
- 12. (In Press). "Hypnosis," analgesia, and the placebo effect. *Journal of the American Medical Association*.
- 13. (In Press). The nature of hypnosis: Vol. 1. Hypnosis, perception, and psychosomatics.
- 14. Barker, W., & Burgwin, S. (1948). Brain wave patterns accompanying changes in sleep and wakefulness during hypnosis. *Psychosomatic Medicine*, *10*, 317-326.
- 15. Barry, H., Jr., MacKinnon, D. W., & Murray, H. A., Jr. (1931). Studies in personality: A. Hypnotizability as a personality trait and its typological relations. *Hum. Biol.*, *13*, 1-36.
- 16. Bernheim, H. (1902). Suggestive therapeutics. New York: Putnam.
- 17. Binet, A., & Fere, C. (1888). Animal magnetism. New York: Appleton.
- 18. Christenson, J. A. (1949). Dynamics in hypnotic induction. *Psychiatry*, 13, 37-54.
- 19. Christenson, J. A. (1956). An operational approach to hypnosis. *Journal of Clinical & Experimental Hypnosis*, *4*, 89-91.
- 20. De Milechnin, G. S. (1955). Concerning the concept of hypnotic depth. *Journal of Clinical & Experimental Hypnosis*, *3*, 243-252.

- 21. Erickson, M. H., & Erickson, E. M. (1938). The hypnotic induction of hallucinatory color vision followed by pseudo-images. *Journal of Experimental Psychol.*, 22, 581-588.
- 22. Erickson, M. H., & Kubie, L. S. (1941). The successful treatment of a case of acute hysterical depression by a return under hypnosis to a critical phase of childhood. *Psychoanal. Quart.*, 10, 592-609.
- 23. Erikson, E. H. (1953). Growth and crises of the "healthy personality." In C. Kluckhohn and H. A. Murray (Eds.), *Personality in nature, society, and culture,* 2nd ed. (pp. 185-225). New York: Knopf.
- 24. Estabrooks, G. H. (1943). Hypnotism. New York: Dutton.
- 25. Eysenck, H. J.(1947). Dimensions of personality. London: Kegan Paul.
- 26. Freud, S. (1922). *Group psychology and the analysis of the ego*. New York: Boni and Liveright.
- 27. Friedlander, J. W., & Sarbin, T. R. (1938). The depth of hypnosis. *Journal of Abnorm. Soc. Psychol.*, *33*, 281-294.
- 28. Gigon, A., Aigner, S., & Brauch, W. (1926). Über den Einfluss der Psyche auf Körperliche Vorgänge. Hypnose and Blutzucker. *Schweiz. med. Wschr.*, *56*, 749-750.
- 29. Hull, C. L. (1933). Hypnosis and suggestibility. New York: Appleton-Century.
- 30. Kretschmer, M. & Kruger, R. (1927). Über die Beeinflussung des Serumkalkgehaltes in der Hypnose. *Klin. Wschr.*, *6*, 695-697.
- 31. Leuba, C. (1941). The use of hypnosis for controlling variables in psychological experiments. *Journal of Abn. Soc. Psychol.*, *36*, 271-274.
- 32. (1957). The reality of hypnotic phenomena: A critique of the role-playing theory of hypnosis. *Journal of Clinical & Experimental Hypnosis*, 5, 32-38.
- 33. Malmo, R. B., Boag, T. J., & Raginsky, B. B. (1954). Electromyographic study of hypnotic deafness. *Journal of Clinical & Experimental Hypnosis*, 2, 305-317.
- 34. Pattie, F. A. (1941). The production of blisters by hypnotic suggestion: A review. *Journal of Abn. Soc. Psychol.*, *36*, 62-72.
- 35. (1956). Methods of induction, susceptibility of subjects, and criteria of hypnosis. In R. M. Dorcus (Ed.), *Hypnosis* and *its therapeutic applications*, New York: McGraw-Hill.
- 36. Rosenthal, B. G., & Mele, H. (1952). The validity of hypnotically induced color hallucinations. *Journal of Abnormal Social Psychology, 47*, 700-704.
- 37. Sarbin, T.R. (1950). Contributions to role-taking theory: I. Hypnotic behavior. *Psychological Review*, *57*, 255-270.
- 38. Saltzman, B.N. (1936). The reliability of tests of waking and hypnotic suggestibility. *Psychological Bulletin*, *33*, 622-623.
- 39. Schilder, P. & Kauders, O. (1927). Hypnosis. Nerv. ment. Dis. Monogr. Series, 46.
- 40. Schwartz, B.N., Bickford, R.G., & Rasmussen, W.C. (1955). Hypnotic phenomena, including hypnotically activated seizures, studied with the electroencephalogram. *Journal of Nerv. Ment. Disorders*, 122, 564-574.
- 41. Weitzenhoffer, A.M. (1957). General techniques of hypnotism. New York: Grune & Stratton.
- 42. Wells, W.R. (1947). Expectancy versus performance in hypnosis. *Journal of General Psychology*, *35*, 99-119.
- 43. Young, P.C. (1925). An experimental study of mental and physical functions in the normal and hypnotic states. *American Journal of Psychology*, *36*, 214-232.
- 44. (1928). The nature of hypnosis, as indicated by the presence or absence of post-hypnotic amnesia and rapport. *Journal of Abnormal Social Psychology*, 22, 372-382.

Barber

Author Notes

¹Worcester Foundation for Experimental Biology and Medfield (Massachusetts) State Hospital. A condensed version of this paper, entitled "Experimental Evidence for a Theory of Hypnosis," was presented at the annual meeting of the American Psychological Association in the Symposium on "The Nature of Hypnosis," September 9, 1959. This investigation was supported by a research grant, MY3235, from the National Institute of Mental Health, Public Health Service, and by a research grant from the National Association for Mental Health.

²In addition to the above, the good hypnotic subject is generally more attentive and more responsive to his specific stimuli (viz., stimuli emanating from the hypnotist) than the "normal waking" individual. However, when a "waking" individual is wholeheartedly concentrating on a book or when he loses himself in a play or television show, he may be just as responsive to some stimuli and just as unresponsive to other stimuli as the good subject during the hypnotic experiment.

³However, when the electroencephalogram indicates that the "hypnotized" subject is asleep, the subject is not responsive to further suggestions. The moment the subject begins to respond to additional suggestions, the electroencephalogram shows patterns characteristic of "drowsiness" or "normal waking."

⁴This section, which reports the results of experiments carried out during the summer and fall of 1959, was not included in the paper presented before the meeting of American Psychological Association.

⁵The concept of "basic trust" is borrowed from Erik Erikson (23) who writes as follows: "For the first component of a healthy personality I nominate a sense of *basic trust*, which I think is an attitude toward oneself and the world derived from the experiences of the first year of life. By 'trust' I mean what is commonly implied as far as others are concerned and a simple sense of trustworthiness as far as oneself is concerned. When I say 'basic', I mean that neither this component nor any of those that follow are, either in childhood or in adulthood, especially conscious." Whether the "attitude of basic trust" derives from the experiences of the first year of life or is a function of experiences extending over a much longer life period can be decided only by long-term genetic studies.

⁶The results with the other 50 subjects on this and the subsequent experiment are not immediately relevant to this discussion and are postponed for detailed comment to a forthcoming publication (13).